2.0 CONFIGURATION MANAGEMENT BASELINE

Since its first release in 1989, EADSIM has been continuously modified in response to user needs. Most of these modifications are of interest to the user community in general and have been incorporated into new model versions. A smaller set of modifications have been developed to satisfy the requirements of a particular user and have little or no interest for the user community at large or are required to satisfy a short schedule. Each of these is delivered as a site modification to the requesting user. Later, if interest in the capability grows throughout the user community, it is incorporated into a new version baseline.

Configuration Management (CM) is essential to maintaining control of the large number of changes that have accrued to EADSIM, as well as coordinating the efforts of the development team in the process of modifying the software to implement user requirements. A notional flowchart of the EADSIM CM process is depicted in Figure 2.0-1. Each change is initiated in the form of a Software Change Request (SCR) which is submitted to the developer.

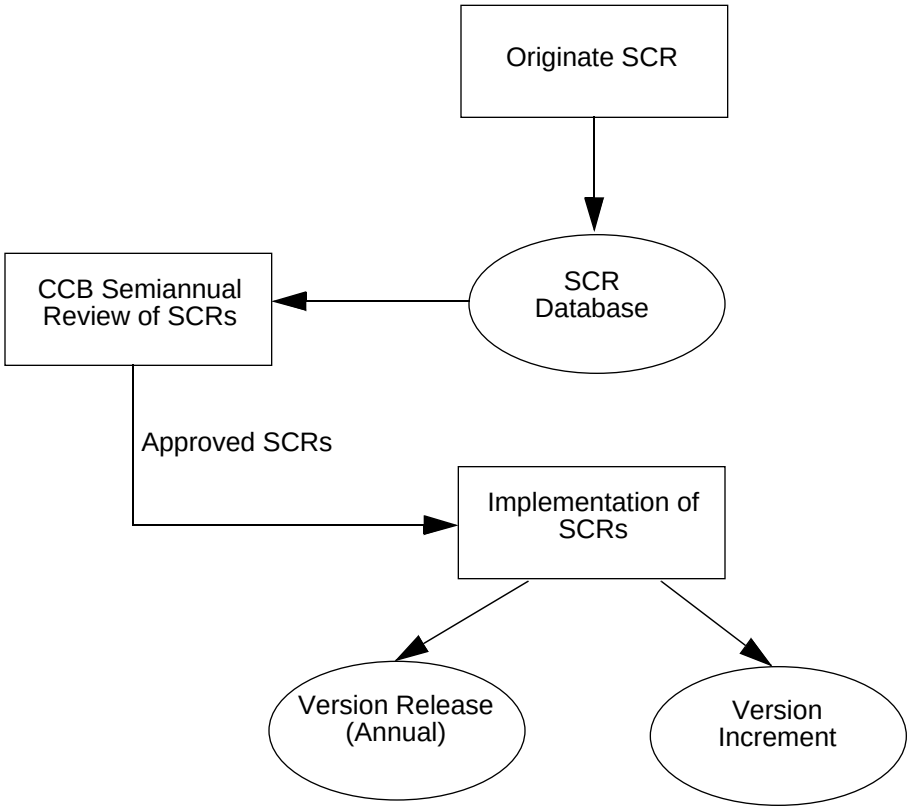

FIGURE 2.0-1. EADSIM CM Process Flowchart.

The basic functions of the Configuration Control Board (CCB) are:

- Evaluate each SCR for approval, disapproval, or deferral
- Provide procedural, technical and operational evaluation of all SCRs
- Provide a systematic framework for controlling EADSIM Modifications

SCRs approved by the CCB are candidates for implementation. Separate procedures are used to expedite bug fixes in EADSIM. Teledyne Brown Engineering (TBE) was given approval by the US Army Space and Strategic Defense (USASSDC) Testbed Product Office (TPO) to fix all detected bugs under the maintenance portion of its contract. If a SCR is submitted and it is determined that it contains a bug, it is ***not*** reviewed by the CCB membership. The bug is then corrected within the development library. Section 2.4.4 details the procedures that expedite bug fixes for users.

The USASSDC TPO manager is the Chairman for CCB meetings. A representative from TBE and other government agencies, users, or support contractors (as required) participate in the CCB meetings as non-voting members providing technical assistance and advice as necessary. Voting representation on the CCB is provided by the following agencies:

AEGIS Program Office
Air Combat Command
Air Force Studies and Analyses Agency
Ballistic Missile Defense Organization
Electronic Systems Center
Headquarters, US Air Force/Checkmate
Naval Surface Warfare Center - Dahlgren Division
Phillips Laboratory
Program Executive Office, Missile Defense
Program Executive Office, Theater Air Defense
U.S. Army Air Defense Artillery School
U.S. Army Aviation Center
U.S. Army Space and Strategic Defense Command - Chair
United States Central Command
United States Strategic Command
Office of the Joint Chief of Staff, J-8

The details of EADSIM CM are discussed in Section 2.4.

2.1 MODEL DESCRIPTION

The EADSIM is an analytical tool for evaluating the effectiveness of various Command, Control, Communications and Intelligence (C3I), Theater Missile Defense (TMD), and air defense architectures, as well as weapon systems in the full context of an environment of sensors, Command and Control (C2) centers, communication systems, platform dynamics and weapons performance. The software is owned by the Government and has over 300 register user sites. The Government also maintains configuration control of the software.

EADSIM is used for scenarios ranging from few-on-few to many-on-many. Each player, called a platform, is individually modeled, as is the interaction among the platforms. EADSIM models the C2 decision processes and the communications among the platforms on a message-by-message basis. Intelligence gathering is modeled to support the deployment and employment of surface-to-surface missile (SSM) artillery.

2.1.1 Areas Modeled

Functional areas modeled in EADSIM include the following:

- Air Defense
  - Surface-to-Air Missiles
    - -- Anti-Air
    - -- Anti-Missile
    - -- Defensive Counter Air
  - Command and Control
  - Air Picture Production and Dissemination
- Offensive Air Operations
  - Fighter Sweep
  - Fighter Escort
  - Bomber
  - Fighter/Bomber
  - Suppression of Enemy Air Defenses (SEAD)
- Helicopters
- Satellites
- Ballistic Missiles
- Cruise Missiles
- Airbases
- Surveillance
- Surface-to-Surface Artillery
  - Command and Control
  - Fire Units
  - Intelligence Gathering and Processing
- Generic Noncombatants
- Communications
  - Networks
  - Devices
  - Individual Messages
- Electronic Warfare
  - Jamming of Sensors and Communications
  - SIGINT Detection in Support of Artillery
- Terrain
  - Sensor Masking
  - Communications Propagation
  - Flight/Movement
- Weaponry
  - Air-to-Air
  - Air-to-Surface
  - Surface-to-Air
  - Surface-to-Surface
- Commander/Subordinate Weapons Control

- Areas of Interest
  - Track
  - Friendly Origins
  - Missile Engagement Zone
  - Tactical Missile Defended Areas
  - Fighter Engagement Zone
  - Area of Responsibility.

All of these areas are modeled for both friendly and hostile forces. The level of detail that can be modeled is independent of whether a platform is friendly or hostile.

Source Code Control System (SCCS)

TBE uses a commercially available maintenance and enhancement software tracking tool that takes custody of a file and, when changes are made, identifies and stores them in a file with the original source code. Retrieval of the original or any set of changes is possible. Any version of the file as it develops can be reconstructed for inspection or additional modifications. History data is also stored with each version: why the change was made, who made it and when it was made.

TBE uses the administrative functions of SCCS to implement a full source tracking system. The SCCS allows easy access by programmers while maintaining control of the source library. It is used to track SCR number, Software Test Form (STF) number, author and date of all modifications. The SCCS also tracks who has checked out a file and when it was checked out. A complete description of the SCCS is provided in Appendix D of the TBE Software Development Plan (SDP).

Code Development

During the code development phase, source code is generated to complement the C Program Diagraming Logic (CPDL) design that was created in the preliminary and detailed design phases. The code is produced using the coding standards set forth in MIL-STD-498 as guidelines.

2.1.2 Host Platforms

EADSIM consists of software and documentation only. The hardware required to run EADSIM is user supplied and maintained. Current hardware suitable for use of EADSIM consists of the Silicon Graphics and SUN family of workstations.

2.2 EADSIM DEVELOPMENT HISTORY

EADSIM was developed by TBE initially for the SSDC and the U.S. Army Missile Command (MICOM) as a low-cost, interim analysis capability to evaluate Extended Air Defense Concepts and to provide feedback to the development of the Extended Air Defense Test Bed (EADTB).

The original concepts of EADSIM emerged from the Joint Tactical Information Distribution System (JTIDS) Operational Performance Model (JOPM) developed for the Office of the Assistant Secretary of Defense for C3I. JOPM was the first of a family of models that combined new advances in available hardware with advanced modeling technology to simulate complex military systems and concepts and used graphics to aid in

analysis of the results. The JOPM project evaluated the effectiveness of the F-15 fighter with and without JTIDS in a defensive counter-air role.

Its evolution continued when MICOM began to modify the code to simulate active defense and attack operations as part of early tactical missile studies. In 1990, the simulation was renamed Theater Missile Defense/Command, Control, Communication and Intelligence Simulation (TMD/C3ISIM).

In Sept 1992, SSDC began to modify the model to perform TMD studies and named their version the Extended Air Defense Simulation or EADSIM. The modifications made over the next few years included some additional post-processing and scenario generation tools, upgrades to support Operations Desert Shield and Desert Storm, and several TMD-related modifications, e.g., multi-tier architecture. In 1991, SSDC assumed sole configuration management responsibility for EADSIM. SSDC's Testbed Product Office (TPO) manages the EADSIM program.

2.2.1 Exercise Participation

During the last few years, EADSIM has participated in numerous exercises and analytical studies providing many diverse functions. Provided in Table 2.2-1 is a partial listing of recent exercises and analytical studies in which EADSIM has been used and its role.

TABLE 2.2-1. EADSIM Exercise Support.

EXERCISE	DATE	USE
TMD AWE	July 94	Provided Red and Blue Air Picture and TBMs
FOCUSED DISPATCH (U.S. Army Air Defense Lab and Mounted Battle Warfare Center)	14 Aug - 31 Aug 95	Providing Red and Blue Air Picture and Provided Situational Display
GLOBAL 95 (U.S. Naval War College)	10-28 July 95	Provided Red and Blue Air Picture and TBMs
ORNATE IMPACT (Combined Forces Command - Korea)	14 Aug - 2 Sept 95	Provided Red and Blue Air Picture and TBMs
TMD COEA (Ballistic Missile Defense Organization)	Feb 95 - Sept 95	The Model of Choice for the Ballistic Missile Defense Organization for the TMD COEA Study, Modeled Red and Blue Air Picture and TBMs
Louisiana Maneuvers	1994 and 1995	Provided Red and Blue Air Picture and TBMs via the Distributed Interactive Simulation (DIS) Protocol

Perhaps the most noteworthy use of EADSIM occurred during Operation Desert Shield/Desert Storm. The Air Force Studies and Analysis Agency (AFSAA) and Air Force CHECKMATE deployed with EADSIM to Saudi Arabia to assist in efforts for planning the air campaign. Initially, EADSIM was used to do NIGHT 1, RAID 1 attrition analysis. Following initial assessments, EADSIM was used to plan the refueling scheme and suppression of enemy air defenses. As the air campaign progressed, EADSIM was used in shoot down analysis.

2.3 VERSION DESCRIPTION AND CURRENT STATUS

2.3.1 Configuration Items Description

Configurable items for EADSIM consist of the code (either source or executable) and the documents accompanying the code. Paragraph 2.3.2 contains a complete listing of documentation provided. Table 2.3-1 lists the attributes of EADSIM.

TABLE 2.3-1. EADSIM Attributes.

Application Domain	Simulation of theater air and missile defense
Software Team Size	36
Source Lines of Code (K)	732
Language	C
Target Hardware	Silicon Graphics - Indigo, Indigo 2, Indy Sun - SunSPARC 10 and 20
Host Hardware	Silicon Graphics - Indigo, Indigo 2, Indy Sun - SunSPARC 10 and 20
Applicable Regulations	Army Regulation (AR) 5-11, Models and Simulations; US Army Training and Doctrine Command (TRADOC) Regulation 5-11, Models and Simulations
Configuration Management Tools	Unix Source Code Control System (SCCS), Filemaker Pro Database System
Current Version:	
TMD COEA*	4.02h; Unclassified, 7 July 1995
General Release	5.0; Unclassified, 4 December 1995

*The Ballistic Missile Defense Organization (BMDO) funded the development of v4.02. BMDO has requested that the V4.02 series be released to TMD COEA Members only. Approval for general release will be given at a later date (TBD).

2.3.2 Documentation

The documentation for EADSIM consists of the Executive Summary [1], User's Manual [2], User's Reference Manual [3], Methodology Manual [4], Release Notes [5], Configuration Management Plan [6] and Software Development Plan [7]. Each major release is accompanied by a full set of documentation, excluding the Executive Summary, CM Plan (CMP) and the SDP (see Para 2.4.1 for identification conventions). Minor releases will normally only be accompanied by the Release Notes. All publications provided are Unclassified; however, the model and documentation does contain technical data whose export is restricted by the ARMS Export Control Act (Title 22, U.S.C., Sec 2751 et seq.) of Executive Order 12470. Violators of these export laws are subject to severe criminal penalties. Potential users affected by this Act should contact Mr. James Watkins II, USASSDC TPO, DSN 645-1681, Commercial (205) 955-1681 for further information.

The CMP defines for users the procedures for making changes to the EADSIM model. The CMP itself is a configuration item, subject only to changes that are approved by the EADSIM CCB.

There are a few mechanisms in place for users in need of an immediate bug fix. After a file has been corrected and placed in the library, a copy is placed on a workstation which has Internet access. Users are able to retrieve the file in question via File Transfer Protocol (FTP). For those users where the need is not so immediate, the procedures are to wait until additional bug fixes are corrected, at which time a new release is announced (i.e. 4.01a, b, etc.,). Users are notified of the release and instructed to send a blank tape to the EADSIM User Services Office if they desire to obtain the latest version.

2.4 EADSIM CHANGE PROCEDURES

2.4.1 Elements of EADSIM Configuration Management

Software Change Requests (SCRs)

The SCR is the primary external means for initiating changes to the model. The SCR describes a desired change or an observed problem either from the users or the developers. When approved by the Government, it serves as the primary authorization for changes to EADSIM.

The SCR process begins with its submission. The submitting agency is contacted to verify receipt of the SCR and informed of the number assigned to the SCR. The SCR is then reviewed and entered into a database and maintained until the CCB meets. Approximately 3 weeks prior to the CCB, the SCRs to be acted upon are sent to the members of the CCB for review.

The customer CCB normally meets biannually to review SCRs. The SCR may be approved, disapproved, or deferred until a future meeting of the CCB. Approved SCRs constitute unfunded requirements. Disapproved SCRs may result from unsuitable requests beyond the scope of the model.

Internally to TBE, the SCR is used as the primary reference for all activities that follow. The SCR is referenced in the requirements documents and software task documentation, and it is logged with the actual code changes by the automated systems that control the code library. The SCR is also reported in the release notes. SCRs are retained in an internal database that is protected by a password system which prevents unauthorized access

Software Problem Reports (SPRs)

The SPR is the primary internal report for problems observed in integration and testing of the model. It is also used to describe problems observed by users. SPRs are retained in an internal database that is protected by a password system which prevents unauthorized access.

The SPRs are periodically reviewed by the development managers to assign responsibility for investigation and resolution of problems. When a problem in a released version is reported, a SCR is prepared. If the observed problem is due to ongoing developmental changes, the changes required to resolve the problem are performed under the SCR authorizing the original changes.

Software Task Forms (STFs)

The STF is the primary internal report for tracking, reviewing, and approving software tasks. It serves the same purpose as software development folders. STFs are retained in an internal database that is protected by a password system which prevents unauthorized access.

Hot Line Reports

Hot line reports are the primary means for documenting and tracking contact with users over the hot line. Information documented for each call includes caller, the nature of the problem, actions taken to resolve the problem, the time required for resolution, and any required follow up actions. A printout of the reports is periodically provided to program management personnel. The reports are also reviewed to identify common problems. Hotline calls can result in SCRs. Hot line reports are retained in an internal database that is protected by a password system which prevents unauthorized access.

Source Code Control System (SCCS)

The SCCS is a maintenance and enhancement tracking tool that takes custody of a file and, when changes are made, identifies and stores them in a file with the original source code. Retrieval of the original or any set of changes is possible. Any version of the file as it develops can be reconstructed for inspection or additional modifications. History data is also stored with each version: why the change was made, who made it and when it was made.

TBE uses the administrative functions of SCCS to implement a full source tracking system. The SCCS allows easy access by programmers while maintaining control of the source library. It is used to track SCR number, STF number, author and date of all modifications. The SCCS also tracks who has checked out a file and when it was checked out. A complete description of the SCCS is provided in Appendix D of the TBE SDP.

Code Development

During the code development phase, source code is generated to complement the CPDL design that was created in the preliminary and detailed design phases. The code is produced following the coding standards set forth in Appendix B of the SDP.

When the code has been completed, code reviews are performed by all functional areas in the project, as detailed on the STF. This ensures wide visibility of activities throughout the team. The code reviews are performed by a designated person from each functional area. The reviews include checks for correctness of the code, a review of style and format, a review for good programming practice and a check to be sure that the comments have been filled out. Each reviewer is provided design documentation along with the code in order to ensure that the code is written as designed. The representative of the area with the majority of the modifications is required to examine the code first and most thoroughly. Code modifications may be returned to the configuration after all signatures by the functional areas have been obtained.

Controlled environments used in the EADSIM for maintenance, development, integration and testing are detailed in Section 7 of the SDP. The developer checks out any modules to be modified from the development baseline using the SCCS tools. Source code for a given task is developed in each developer's environment. When the coding has been completed the code is tested. Testing uses test harnesses for low level function testing in order to custom instrument the code and drive it through the range of parameter values. Upon successful unit testing, the code is linked with the object libraries from the development environment to form a local executable. The executable is tested in place, using data provided for testing and custom data sets designed to exercise the new features. When testing is complete, the code is reviewed by all the functional areas for approval. The approved code is placed back in the development library. When the all the code comprising the modifications for a version have been placed in the development library, it is copied to the baseline library to be placed under configuration control.

2.4.2 Sequence of Actions

The software change process is initiated when a user reports a problem or requests additional capability or when internal testing reveals a problem. Problems are logged as SCRs and SPRs respectively, and enter the internal tracking process. (The tracking process is discussed in further detail in Section 7 of the EADSIM SDP).

Action first is taken to verify the problem. The scenario in which the problem was observed is replicated and executed. If the problem can be repeated, it is assigned to a developer for correction. The status of the corrective actions is maintained in the STF. The contents of the STF are defined in Sections 4 and 7 of the SDP. USASSDC has authorized TBE to correct problems in EADSIM under the maintenance portions of contract SOW. As mentioned above, the SCR is the primary means for users to document problems or desired changes and enhancements to the model. Figure 2.4-1 is a block diagram of the change process. The following block descriptions expand on the blocks in the diagram.

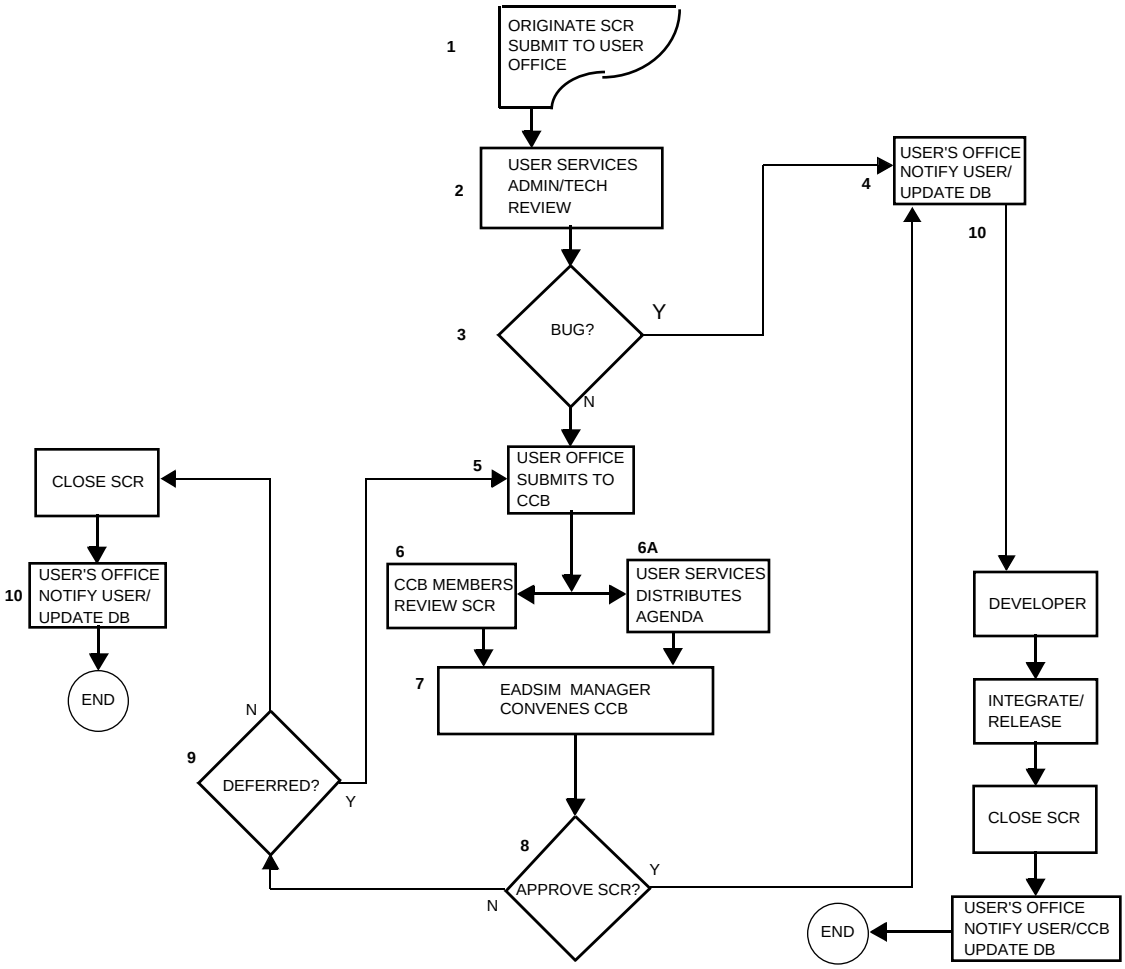

FIGURE 2.4-1. Change Control Process

A. Preparation of SCRs and Submission to the EADSIM User Services Office (Block 1). Users of EADSIM, determining that a SCR is required, will submit a completed SCR to the EADSIM User Services Office.

B. EADSIM User Services Office Administrative and Technical Review (Block 2). The EADSIM User Services Office will conduct a review for an assessment of technical adequacy, impact on other projects and administrative completeness and correctness of the SCR. Also, at this time a unique number will be assigned to the SCR identifying it for further processing. The originator will be informed of the SCR number. Status accounting of the SCR is initiated upon receipt by the User Services Office to establish an audit trail.

When possible, the User Services Office effects any necessary changes to the SCR, after coordination with the originator, to prepare it for processing. Where extensive deviations to prescribed procedures are found, the SCR is returned to the originator for corrective action. SCRs not returned and not resubmitted within 60 days (without a request for extension) shall be automatically canceled for audit purposes by the User Services Office.

A SCR which has been canceled may be resubmitted at the discretion on the originator. A new SCR number will be used when resubmitting.

C. Determination of Software Bug (Block 3). The SCR is analyzed as to whether it contains a change, software bug or enhancement. Bugs are immediately returned to the User Services Office where the user is notified and SCR database is updated (Block 4). After the SCR database has been updated, the SCR is forwarded to the Developer for immediate action. After the bug has been corrected by the Developer, the user is notified, the SCR database is updated, the change is integrated into the most recent software under development. Changes and enhancements enter the normal CCB procedures.

D. SCRs Submitted to CCB Members By The EADSIM User Services Office (Block 5). The EADSIM User Services Office will distribute the SCRs IAW an established distribution list. The transmittal cover sheet will provide the target date for the CCB meeting.

E. Review Of SCRs By CCB Members (Block 6). Each CCB member reviews and evaluates the SCRs. Evaluations must reflect the total impact on EADSIM development to include matters of funding.

F. EADSIM User Services Office Prepares and Distributes CCB Agenda (Block 6A). The EADSIM User Services Office prepares the agenda for the CCB meeting, listing the SCRs to be addressed. The agenda is distributed in accordance with the appropriate distribution list. The agenda will also establish the location, date, and time of the meeting. Scheduling will be based on the priorities of the SCRs to be considered. The agenda will be distributed no less than four weeks prior to the CCB meeting. Upon receipt of the agenda announcement message, CCB members should respond with a message that confirms names and security clearances of representatives attending.

G. EADSIM Program Manager Convenes CCB (Block 7). The EADSIM Manager will convene a CCB to process announced agenda items and other business that may come before the board. SCRs which have not been distributed in advance and listed on the agenda will not be addressed. SCRs are discussed and a consensus of all members is sought; however, the decision is based upon a majority of members voting. The Chairman only votes in case of a tie. The Chairman also has veto power and may override the decision of the CCB members. The Chairman announces decisions based upon votes cast or executive decision. Minutes are prepared by the EADSIM User Services Office and distributed to CCB members IAW a prearranged list coordinated prior to the CCB.

H. CCB Decisions (Block 8). The CCB will make decisions on the following issues as applicable:

By majority vote of all members voting:

a. Need to return a SCR to the originator for required correction or additional information.

b. Defer action on a SCR.

c. Determine approval/disapproval of each SCR.

I. CCB Deferral Action (Block 9). If a SCR is deferred, it will be returned to the EADSIM User Office for consideration at the next CCB meeting. If a SCR is not deferred, it will be returned to the EADSIM Users Office for closure.

J. CCB Decision Document (Block 10). Each CCB decision will be documented by the EADSIM Users Office for submission to the Chairperson for signature. Afterwards, the EADSIM User Services Office will update the database, notify the user and close the SCR if disapproved and begin development/planning.

Any proposed SCR may be withdrawn for rework by the originator prior to a CCB decision. The EADSIM User Services Office may return SCRs for rework under the provisions of Paragraph 4.3B of the Configuration Management Plan. In these cases, the SCR will automatically be administratively disapproved if it is not resubmitted within 60 days of its return. An extension of time can automatically be granted by the EADSIM User Services Office when requested in writing with a rationale and target suspense date.

Each SCR deferred by the CCB for rework will be assigned a suspense date for submission of requested information. When the requested information has not been submitted within the assigned suspense date or a written request for extension received, the proposed SCR will automatically be added to the agenda for the next scheduled EADSIM CCB meeting. The assigned responsible user shall provide status information at that meeting.

Any disapproved SCR, to be reconsidered by the CCB, must be resubmitted as a new SCR and a new SCR number will be assigned.

2.4.3 Version Numbering

EADSIM is released approximately on an annual basis (depending on requirements). Each of these major releases will increase one whole number (Version 3.00, Version 4.00, etc.). During major releases, new enhancements are added changing the overall functionality of the model and any remaining bug fixes from the previous version which are not corrected are also included. As incremental modifications (minor releases) are made to each version and released, the release number is incremented in the hundredths position (Version 3.01, Version 3.02, Version 4.01, etc.). On rare occasions, there are slight modifications made to the incremental versions as is currently being done for the TMD COEA. In instances such as this, the version numbers are supplemented with an alpha character (Version 4.02a, Version 4.02b, etc.). This numbering scheme was chosen to minimize confusion among the COEA members.

2.4.4 Automation

TBE uses a variety of CASE tools and tools such as compilers for its software engineering activities. Filemaker Pro, a Macintosh database manager, is used during requirements development activities to analyze requirements contained in the SCRs and identify these for generation of enhancements requirements. Filemaker Pro is also used to maintain the STF and SPR databases. A software development network based on Silicon Graphics workstations running various versions of the IRIX operating system and Sun workstations running Version 4.1.3 of the Sun OS operating system is used during the design and implementation phase to host CASE and software development tools.

A CASE tool called CPDL is used to develop the software design model and for producing design documents. An interactive window building tool, the Resource Editor, is used to design and prototype the man-machine interface and enforce the MMI standards.

The developed software is implemented with C language compilers (MIPs RISC C compiler on Silicon Graphics) and the normal development tool kits from the manufacturers. This includes cross reference analysis tools, interactive editors, and interactive debuggers, dependency table generators (cpp), lexical analyzers (lex), and token parsers (yacc). A similar toolkit is used on the Sun machine.

In addition, there are several miscellaneous tools which are used to support all phases of software development. These are:

- Emacs, an editor for the SGI and Sun computers.
- AME, an editor for the SGI computers. TBE has a site license.
- GDIFF, a visual file difference tool for SGI computers.
- RT, a requirement trace tool.
- Several software packages for the Macintosh are used for general development tasks: word processor, spreadsheet, drawing and data base management.

TBE makes extensive use of the Source Code Control System. The SCCS is a maintenance and enhancement tracking tool that runs under the UNIX system. SCCS takes custody of a file and, when changes are made, identifies and stores them in a file with the original source code. As other changes are made, they too are identified and retained in the file.

Retrieval of the original or any set of changes is possible. Any version of the file, as it develops, can be reconstructed for inspection or additional modifications. History data is also stored with each version: why the change was made, who made it, and when it was made.

2.5 USER SUPPORT FUNCTIONS

The TBE EADSIM program performs other software development functions including the operation of a user hotline, integration evaluations and training courses.

2.5.1 User Hotline

The user hotline is a toll free number (1-800-C3I-USER) that the users may call for assistance in the operation of EADSIM. It provides a low-cost, natural feedback mechanism for the program to keep in touch with the needs and concerns of the users. It is operated by the development staff from 0800 to 1630 hours Central Time on normal business days (normally Monday through Friday with the exception of company holidays). Questions from the users are answered immediately if possible.

2.5.1.1 Organizational Structure - User Hotline

The User Hotline is operated by the simulation development organization.

2.5.1.2 Personnel - User Hotline

All technical personnel below the first-line supervisors man the hotline in half day shifts on a rotating schedule. Two personnel have responsibility for the hotline per day. Those user problems which cannot be resolved by the current hotline operator are referred to the subject matter expert on the development team.

The user hotline has historically required approximately 30 - 40 minutes per call with a frequency of approximately 6 calls per day. Operators continue with their normal work while staffing the hotline when possible.

2.5.1.3 Other Resources - User Hotline

The hotline operator has access to a large number of resources for helping the users. These resources include:

- A Silicon Graphics workstation with all currently fielded versions of EADSIM available and example databases connected to the network with other EADSIM machines
- A terminal connected to this machine
- A Macintosh Classic connected to the network, next to the workstation
- A complete set of EADSIM documentation
- A list of common questions and answers covering topics such as installation, common errors, known problems and workarounds, and upcoming meeting dates and locations.
- An automated database log of all previous hotline calls
- The telephone reserved for use with the hotline is physically located in the main development computer room.

2.5.1.4 Methods and Procedures - User Hotline

The user hotline methods and procedures provide for quick answers to user questions in most instances, tracking of response status for problems which cannot be immediately answered, and reporting of EADSIM problems identified through the hotline.

The Silicon Graphics workstations and the terminals are used to attempt to duplicate user problems to the extent possible in order to provide an immediate answer. The telephone for the hotline is reserved for use with the hotline. The caller, time/date, problem description, solutions offered and results, and time spent is logged in a database. This database is used to periodically report to the program management and to the customer. The database also serves as an action item tracker for required follow on contact when the question cannot be immediately answered. Common user problems or identified problems result in the submission of an SCR.

2.5.2 Integration Evaluations

Many users within the EADSIM community perform site modifications to support their immediate analysis needs. These modifications are given to TBE and logged in through a tape library control function. If the modifications are determined to be potentially useful, a SCR is submitted, after which the SCR enters the normal CCB procedures described in Section 2.4. Additional information on CCB procedures is in Section 7.3 of the SDP.

2.5.3 Training Course

Teledyne Brown Engineering offers a training course for the development of user skills for efficient and effective use of EADSIM. The training approach is simple in concept, yet thorough in approach. Model theory and operation are taught in a lecture format; hands on applications use the theory and operation to build and execute scenarios. Courses are taught in the TBE facilities located in Huntsville, AL. When special circumstances dictate, the course will be conducted at an off-site location. Course enrollment is accomplished by filling out a course registration form and submitting it to the Program Manager, EADSIM, Cummings Research Park, ATTN: Madalyn Maybee, 300 Sparkman Drive N.W. Huntsville, Al 35807-7007 or calling (205) 726-2361, FAX (205) 726-3414.

2.5.3.1 Course Highlights

Highlights of the 5-day course, involving workstation exercises, include:

- UNIX OS Overview
- Rulesets - Actions, Applications and Timing
- Track Data - Sources, Management, Handling and Reporting
- Sensor Modeling
- Weapons - Selection, Use and Intercept Evaluation
- User Specified Parameters
- Propagation - Connectivity, Networks and Jamming Effects
- Areas of Responsibility (AORs) and Areas of Interest (AOIs)
- Post Processing
- Utilities

2.5.3.2 Training Materials

The following training materials are included in the course and are the student's to take home at the conclusion of the course:

- User's Manual
- User's Reference Manuals
- Methodology Manuals
- Presentation Material
- Scenario Workbook.

2.6 ASSESSMENT AND IMPLICATIONS FOR MODEL USE

The most significant impact of the EADSIM CM process on the user is the time required to process a change request through the CCB. Since the CCB meets biannually an SCR

may require six months to get through the approval cycle. Once an SCR is approved, it is immediately considered an unfunded requirement. Overall project direction and budgeting will determine when the SCR is incorporated into the baseline. Government agencies and contractor support personnel have been able to overcome this latter delay by using the Military IntraAgency Purchase Request (MIPR) through USASSDC.

A provision for telephonic voting has been written into the EADSIM Configuration Management Plan to offset the delay in waiting for regular meetings of the CCB. A CCB member may request that the CCB chairman convene a telephone vote at any time to consider proposed changes (SCRs) that the CCB Chairman considers non-controversial, or for which advance coordination has indicated acceptance is probable. Each member provides his vote to the CCB Chairman by telephone. These proposed changes will be distributed in the same manner as those requiring a formal CCB meeting, except that the accompanying cover letter will request that each CCB member provide his/her position by telephone to the CCB Chairman. If no problems are uncovered by this procedure, and a majority vote is obtained, with no member requesting that the SCR be formally presented to the CCB, then the SCR will be approved. Administrative/wording corrections are not sufficient cause to remand the SCR to a formal CCB meeting. However, administrative/wording corrections collected by telephone vote must be discussed with the other CCB representatives prior to the further conduct of the telephonic vote. Should an unresolved issue arise during the telephonic vote, that particular SCR will be scheduled for a regular CCB meeting for resolution.

The EADSIM development team can develop site specific versions for organizations who wish to fund changes quickly. This procedure short circuits the formal CM process but does not result in an update to the baseline. Site modifications can be placed in the baseline upon approval through the normal CM process.